Space Weather Forecast

Issued on Wednesday, 15 November 2023 at 01:20 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

Space Weather Forecast Headline: Slight chance of G1/Minor Geomagnetic storm day 1 (15 Nov). Decreasing chance of further Moderate flares.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Moderate solar activity, with one Moderate flare observed from a small sunspot now near the southwest limb, and difficult to see. There are four sunspot regions on the disc. There are two further in the southwest. This includes the largest region on the disc, with some ongoing slight development observed, and a further smaller and weaker bipolar region. The other sunspot region is in the northwest, but is a very small and simple unipolar spot. No Earth-directed coronal mass ejections (CMEs) have been observed.

Solar Wind / Geomagnetic Activity: Solar winds showed likely showed the passage of a very weak CME from an uncertain source. Wind speeds were slightly elevated at first, peaking 460km/s around midday, before easing to background thereafter. Total magnetic field strength was Moderate for much for the period but eased to be Weak after 14/2330 UTC. The north-south component was initially moderately positive (northward) but became generally weakly (southward) from 14/1220 UTC. Geomagnetic activity has been Quiet to Unsettled (Kp 0-3).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) persisted at background with no solar radiation storms observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Generally Low, but with a decreasing chance of further isolated Moderate flares.

Solar Wind / Geomagnetic Activity: Slow CME from 10 Nov has the potential to give a glancing interaction on day 1 (15 Nov), however this is low confidence and any enhancement is currently expected to be limited. A further slight enhancement is likely days 1-2 (15-16 Nov) from a connection to the faster winds from a small coronal hole, before easing day 3 (17 Nov) onward. Mainly Quiet geomagnetic activity at first, rising to Unsettled to Active later day 1 and into day 2 (15-16 Nov). Any combined effect of the CME and coronal hole will bring a slight chance of an isolated G1/Minor geomagnetic storm. Activity easing to be Quiet with isolated Unsettled intervals day 3 onward (17 Nov).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is expected to persist at background with no solar radiation storms occurring.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

© Crown Copyright 2023. All Rights Reserved.

Met Office

Space Weather Forecast

Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	15	5	1	1
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	Yes	25	20	20	20
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	2	2	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

© Crown Copyright 2023. All Rights Reserved.